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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,461	08/27/2003	David Dawes	9140.0025	7106

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

DUPUIS, DEREK L

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,461

Applicant(s)

DAWES, DAVID

Examiner

Derek L. Dupuis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/10/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 3-14 have been considered but are moot in view of the new ground(s) of rejection.

Very Large IDS

In so far as obfuscation allows examiner has considered all of the references submitted as part of the unusually large Information Disclosure Statements but has not found any reference to be particularly relevant. If Applicant is aware of pertinent material in the references, please provide concise explanations (point out specific documents and their relevant pages and lines) in a response to this Office action. Also, Applicant's IDS submittal of the US Patents is not compliant with MPEP requirements; please ensure all future submittals comply with MPEP requirements.

The following is an excerpt from MPEP 609:

“Although a concise explanation of the relevance of the information is not required for English language information, applicants are encouraged to provide a concise explanation of why the English language information is being submitted and how it is understood to be relevant. Concise explanations (especially those which point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability.”

Applicant is reminded of section 2004, paragraph 13, of the MPEP.

2. It is desirable to avoid the submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant and marginally pertinent cumulative information. If a long list is

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submitted, highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance. See *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), *cert. denied*, 414 U.S. 874 (1974). But cf. *Molins PLC v. Textron Inc.*, 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

3. The information disclosure statement (IDS) submitted on 8/10/2006 was filed after the mailing date of the non-final rejection on 3/23/2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 7, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by *Zhou et al (US 2003/0044118 A1)*.

6. Zhou et al teach an optical waveguide shown best in figure 13. The amorphous film based slab waveguide has a refractive index contrast of .38%. This is greater than the claimed range of 0.2%. Zhou et al teach that the core (1345) has a refractive index of 3.5 and the cladding (1350) has a refractive index of 1.7 (see paragraph 187-188). The core is disposed on a buffer layer (1310) which is disposed on a substrate (1315). As shown in figures 2-6, Zhou et al

discloses that the waveguide can be coupled to a laser diode to transmit light emitted by the diode. The waveguide has a thickness sufficient to couple the light from the laser diode as shown in figures 2-6.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Zhou et al* (US 2003/0044118 A1) as applied to claims 1, 7, and 9 above, and further in view of *Hubner et al* ("Planar Er- and Yb- Doped Amplifiers and Lasers").

9. Zhou et al teach an optical waveguide device as discussed above in reference to claim 7. Zhou et al do not teach that the slab waveguide is folded in the plane of the slab. Hubner et al teach an optical waveguide device shown in figure 2a with a slab waveguide that is folded in the plane of the slab. Hubner et al also teach that the curled waveguide has a loss of 2.5 dB over 67 cm which comes out to about 0.037 dB/cm which is far less than 0.3 dB/cm. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the slab waveguide taught by Zhou et al by folding it as taught by Hubner for the purpose of increasing the amplification of the waveguide. The longer the waveguide, the greater the gain. Hubner teaches that by "curling" the waveguide within an area, then a longer waveguide can be used thereby increasing the amplification of the device (see the bottom paragraph of page 72).

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10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Zhou et al (US 2003/0044118 A1)* as applied to claims 1, 7, and 9 above, and further in view of *Kaneko et al (US 6,088,492)*.

11. Zhou et al teach an optical waveguide as discussed above in reference to claim 1. Zhou et al do not explicitly state that the waveguide is smooth. Kaneko et al teach a smooth optical waveguide that is coupled to a laser diode. It would have been obvious to one of ordinary skill in the art to make the waveguide of Zhou et al smooth as taught by Kaneko et al. Motivation to do this would be that “a smooth film surface of an optical waveguide....is preferable for achieving a low propagation loss.” See column 3, lines 15-35 of Kaneko et al.

12. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Zhou et al (US 2003/0044118 A1)* as applied to claims 1, 7, and 9 above, and further in view of *Beach (“Theory and optimization of lens ducts”)*.

13. Zhou et al teach an optical waveguide device as discussed above in reference to claim 1. Zhou et al do not teach that the slab waveguide includes a lens duct. Beach teaches a waveguide device with a lens duct to couple light from a diode into a waveguide. It would have been obvious to one of ordinary skill in the art at the time of invention to use a lens duct as taught by Beach in the waveguide device as taught by Zhou et al for the purpose of “amplifying the irradiance of laser diode sources” (see abstract of Beach).

14. Claims 6, 10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Zhou et al (US 2003/0044118 A1)* as applied to claims 1, 7, and 9 above, and further in view of *Medin et al (US 6,760,520 B1)*.

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15. Zhou et al teach an optical waveguide device as discussed above in reference to claim 1. Zhou et al do not teach that the waveguide includes a mode-size converter or a reverse tapered region. However, Medin et al teach a mode size converter with a reverse tapered region for use in an optical waveguide device. Medin et al also teach that the mode size converter can be used in an array with an array of laser diodes and waveguides (see column 10, line 53 to column 11, line 14). It would have been obvious to one of ordinary skill in the art at the time of invention to use the mode-size converter taught by Medin et al in the optical waveguide device of Zhou et al for the purpose of improving optical coupling between a waveguide and a light emitting device (see abstract).

16. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Zhou et al (US 2003/0044118 A1)* as applied to claims 1, 7, and 9 above, and further in view of *Henrichs (US 2003/0185266 A1)*.

17. Zhou et al teach an optical waveguide device as discussed above in reference to claim 1. Zhou et al also teach that the mode size of an optical beam transmitted through the waveguide slab is smaller than the mode size of an incident light beam (see paragraphs 8-10). The field of the optical mode decreases though the waveguide. Zhou et al do not teach that the diode could be a VCSEL. However, Henrichs shows that a VCSEL and a diode are equivalent structures known in the art and that they are both used in optical pumping. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute a VCSEL for a laser emitting diode as a light source.

Conclusion

18. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Derek L. Dupuis
Group Art Unit 2883


Frank G. Font
Supervisory Patent Examiner
Technology Center 2800

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